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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/675,310
Filing Date: September 29, 2003
Appellant(s): HEILMANN ET AL.

Thomas C. Hughes
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 1/24/07 appealing from the Office action mailed 6/16/06.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

GROUNDS OF REJECTION NOT ON REVIEW

The following grounds of rejection have not been withdrawn by the examiner, but they are not under review on appeal because they have not been presented for review in the appellant's brief. Obviousness type Double-Patenting rejection over claims of US Patent 6,641,731.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4,885,089	HANKAMMER	12-1989
4,201,673	KANNO	05-1980

German Patent No. 343,5883, with English Translation.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 127-133 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-15 of U.S. Patent No. 6,641,731. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the patent recite all the same limitations of the instant claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 55-64, 67, 69,70,71,76-78, 81, 83-92, 94, 95, 97-99,101,104, 105, 107, 108,121 and 124 are rejected under 35 U.S.C. 102(b) as being anticipated by Hankammer (US 4,885,089).

Claim 55, 83: Hankammer teaches an end cap for a filter (title, figures 1,3) comprising a generally axial inlet flow path (9), curved members extending in the axial direction away from an interior surface of the end cap (4, figure 5) defining a flow radial direction for a fluid exiting the end cap as claimed. Curved member and the end cap are single structural components as claimed.

Claims 69,97, 121, 124: Hankammer also teaches a filter in combination and a method of filtering by passing a fluid through a filter having such an end cap - (see column 2 lines 5-35). Curved member and the end cap are single structural components as claimed.

Claims 56-58, 84-86: the end cap can be attached to a dialyzer; 'blood inlet channel' is intended use. A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987)

Claims 59-61, 87-89, 101: flow direction as claimed – see figures and column 2 lines 5-35)

Claims 62-64, 67 and 76-78, 81, 90-92, 94, 95, 104,105, 107,108: the members are integrally formed, extends to the perimeter, arranged circumferentially around the channel, curved, radially symmetrical, equidistant to one-another, and the flow directions are as claimed – see figures.

Claims 70,71,98,99: the channel is an inlet channel – column 2 lines 5-35. dialyzer and blood inlet channel are intended use – Ex parte Masham.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 55-64, 67, 69-78, 81, 83-92, 94,95, 97-105, 107, 108, 110-117, 119 and 121-126 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanno et al (US 4,201,673) in view of Hankammer'089..

Kanno teaches a dialyzer (figure 2 and abstract) comprising an inlet end cap, and plurality of hollow fibers as claimed with the inlet channel being blood inlet; and a method of filtering blood.

The teaching of Kanno differs form the claims in that Kanno does not teach the curved members extending from an interior surface that is adjacent to the channel of the end cap. Hankammer teaches an end cap for filter cartridges having an axial inlet and curved members integrally formed which are symmetrical and equidistant to one-another and render the flow from axial to radial as claimed. It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Hankammer in the teaching of Kanno for improved distribution of blood without channeling as taught by Hankammer (see column 2 lines 5-35). One would use the teaching of Hankammer in the teaching of Kanno because Kanno recognizes the need for proper distribution of blood without channeling and Hankammer teaches an improved structure for obtaining such distribution (Kanno column 3 line 45 – column 4 line 39).

3. Claims 55-64, 67-78, 81-92, 94-105, 107-117, 119-127 and 131-133 are rejected under 35 U.S.C. 103(a) as being unpatentable over German Patent No. 3435883 (hereinafter referred to as GP (883).

GP :883 teaches a dialyzer comprising a casing (12) containing hollow fibers and an end cap (24) attached to the casing (10) wherein the end cap (24) comprises a blood inlet channel (28) in axial direction relative to hollow fibers and curved members (50) arranged circumferentially and equidistant from each other to impart circular motion in a first direction (see figures 1-2). With regard to the first generally axial and second flow directions, the flow direction is axial at the inlet at 28, and then changes to radially outward through the curved members and then changes to radially inward under the member 46 – see flow direction arrow in the figure 1. With regard to the curved members being extending in the first direction away from an interior surface, the vanes extend form an interior surfaces (46 and 54) of the end cap in the axial direction. Please note that the member (46) can also be in the shape of a cone with its apex oriented towards the aperture (28) (see English translation, page 13, bottom paragraph). This structure particularly reads on to the claim language 'curved member extending from an interior surface of the end cap that is adjacent to the channel in a direction same as the first generally axial direction'. Also see page 14, 3rd paragraph of the English translation, in which the elements (50) are also described as serving as spacers that prevent the plate (46) from resting against the end cap, which means the elements (50) can be in physical contact with the surface (54) of the end cap as well, which would make the elements (50) as extending also from the surface (54).

The reference differs from the claims in the recitation of the curved member and the end cap being a single structural component. However this would be only making the curved member part of the end cap instead of being separate from the end cap as in the reference, which is not patentable: "...the use of a one piece construction instead of the structure disclosed in [the prior art] would be merely a matter of obvious engineering choice" (*In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965)). Appellant's argument, that the claims are patentable because the flat disc 46 was eliminated but its function retained, is not persuasive because the circular flow is provided by the ribs, not the plate or cone (46); the ribs are retained in the same physical location to provide the same function. Moreover, the claim language being open-ended does not eliminate the disc or cone (46).

With regard to claims 121-126, the reference teaches the method of filtering by passing a fluid through the filter device; the filter device being a dialyzer, and the fluid being blood. See page 17 of the English translation.

Claims 68,82,96,109,120: These claims recite the sub-combination end cap or the combination filter device, which are taught by the reference – see figures. Channel from exterior to interior – 26. Flow path in the first direction – 28. A member located inside, and extending from the interior chamber – 46, which is straight or conical (see English translation, last paragraph in page 13) and provides a flow direction different from the first direction to the fluid. End cap includes two members – 54 and 46 – respective portions of which are spaced equidistantly, and the spacing between which

decrease in the flow direction. The vanes 50 are also configured to impart a circular motion to the fluid.

Claims 127, 131-132: radial inlet to the end cap would be obvious to one of ordinary skill in the art - only a change of shape from the axial inlet provided in the reference: In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) (The court held that the configuration of the claimed disposable plastic nursing container was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed container was significant.). Changes of size, shape, etc without special functional significance are not patentable. Research Corp. v. Nasco Industries, Inc., 501 F2d 358; 182 USPQ 449 (CA 7), cert. denied 184 USPQ 193; 43 USLW 3359 (1974). The axial channel will require a curvature of a quarter turn (or a 90 deg. bend) to connect to a radial inlet.

Claim 133: connection to the interior to the housing and exterior to the hollow fibers – see 18, which is on the shell of the housing in the reference instead of the end cap as claimed. However, the location of this connection on the end cap is only an obvious equivalent, unless Appellant can show otherwise, because this connection performs the same function. An express suggestion to substitute one equivalent component or process for another is not necessary to render such substitution obvious. In re Fout, 675 F.2d 297, 213 USPQ 532 (CCPA 1982).

(10) Response to Argument

Response to the arguments are given in the same order as presented by the appellant.

A. Rejection of claims 55-64, 67, 69-71, 76-78, 81, 83-92, 94,95, 97-99, 101, 104, 105, 107, 108, 121 and 124 as anticipated by Hankammer:

Claim 55 is taken as representative, which reads:

55. An end cap for a filter device comprising:

a channel providing fluid communication from an exterior of the end cap to an interior chamber of the end cap, a portion of the channel adjacent to the interior chamber defining a fluid flow path in a first generally axial direction; and

at least one curved member wherein the at least one curved member and the end cap are a single structural component, the at least one curved member extending away from an upper interior surface of the end cap that is adjacent to the channel in a direction that is the same as the first generally axial direction and located within the interior chamber of the end cap defining, for a fluid exiting the channel and flowing into the interior chamber of the end cap, a fluid flow path in a second direction different from the first direction.

Hankammer teaches the end cap as exemplified by the elevation and top view drawings shown below:

Fig.1

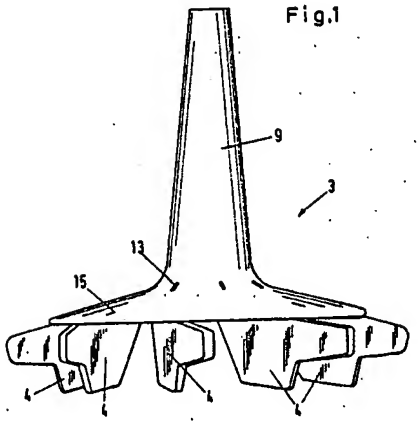
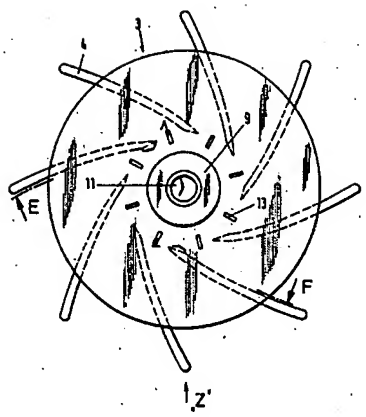


Fig.2



As is clear from the pictures, Hankammer has a channel (duct 11: column 4, lines 43-47) through the conical extension (9), an upper interior surface (bottom side of (15)), curved members (4) extending from (15) and away from the upper interior surface. Rest of the claim limitations, 'providing a fluid communication from an exterior of the end cap to an interior chamber', 'defining a fluid flow path in the generally axial direction', for a fluid exiting the channel ...', and 'a fluid flow path in a second direction different from the first direction' are functional or intended use, which the end cap of Hankammer is capable of (such capability is described below).

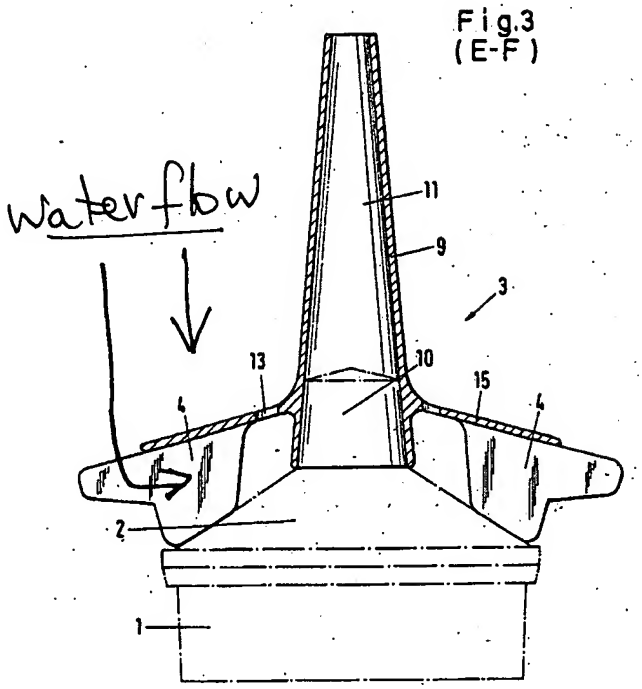
Appellant has not independently argued the independent process claims 121 and 124. However, because process claims are a different invention when compared to the apparatus claims, claim 121 is taken as representing and is copied below, with a showing of how each element of claim 121 can be read on to the reference in brackets.

121. A method for filtering a fluid, comprising the steps of:

passing the fluid through a filter device, the filter device including a casing for housing a filter element [see column 1, lines 17-20] and an end cap attachable to the casing [column 2, lines 11-18], the end cap including a channel [as depicted in figure 3 below] providing fluid communication from an exterior of the end cap [the channel represented by the arrow drawn by hand over the captured figure 3 is exterior to the end cap, but interior to the housing of the filter] to an interior chamber of the end cap [the flow goes from exterior to interior around the edge of "umbrella" (15)], a portion of the channel adjacent to the interior chamber [the channel defined is adjacent to the interior of the conical part (9) of the end cap] defining a fluid flow path in a first generally axial direction [flow in the channel defined is generally axial, "a water jet arriving from above ...": column 4, lines 23-27], and at least one curved member [vanes (4)] wherein the at least one curved member and the end cap are a single structural component [which they are!], the at least one curved member extending away from an upper interior surface of the end cap [as can be seen in the figure] that is adjacent to the channel in a direction that is the same as the first generally axial direction and located within the interior chamber of the end cap defining, for a fluid exiting the channel and flowing into the interior chamber of the end cap, a fluid flow path in a second direction different from the first direction [fluid path in second direction is radially inward, which is different from the axially down first flow path].

Water flow around and through the device is described in the reference in column 4, lines 23-44. The Examiner has hand-drawn an arrow for the water flow in Figure 3,

captured below, to show the flow direction with respect to the end cap, as in the filter of Hankammer.



The structure shown of the end cap (3) with the screen cap (1) in Figure 3 above is situated inside a filter housing. In the interior of the filter housing, there is a channel around the outside of (9). Water flows form the "above" (top being the pointed end of the cone (9): see column 1, lines 30-39), around the cone (9), over the surface of "umbrella" (15) and enters the interior of the end cap, under (15) from the circumference inward, where its flow direction changes from axial to radial, and also circular (eddying around cone 9/10), the circular flow being imparted by the vanes (4) and directed towards the screen surface (2) and to the filter below. This path anticipates the process step of

claims 121 (taken as representing), citations identifying corresponding parts in the reference provided in brackets.

In response to appellant's argument (page 5, 2nd paragraph of the Brief):

> Independent claims 55, 69, 83, 97, 121 and 124 recite, inter alia, the feature of a channel that provides fluid communication from an exterior of an end cap to an interior chamber of the end cap, the channel defining a fluid flow path in a generally axial direction.

For the device claims such as 55, this is only a functional limitation or intended use, which the structure of Hankammer is capable of. For the process claims such as 121, see the fluid flow paths explained above. Appellant's argument apparently is based on the channel being internal to the end cap, particularly, internal to the cone (9). ***However, the claim does not recite that the channel is internal to the end cap.*** The subject claim limitation of the argument only recites "...the end cap including [1] a channel providing fluid communication from an exterior of an end cap to an interior chamber of the end cap, a portion of the channel adjacent to the interior chamber defining a fluid flow path in a generally axial direction". A portion of the flow path, close to the radial ends of the umbrella (15) external to the end cap of Hankammer, as it flows into the vanes of the end cap, (particularly, external to the cone 9) is axial to the end cap as shown.

Note [1]: the word "including" in the claim language is considered as a transitional phrase to mean "comprising" [MPEP 2113.03, "Transitional Phrases"]

In response to Appellant's argument (page 6, first paragraph of the Brief) that the office action contradicts itself in the following paragraph of the final action, (which was in response to appellant's arguments):

> With respect to the argument that the combination of Kanno and Hankammer does not render the present claims obvious: Column 2 lines 23-31 of Hankammer teaches the advantages of having the vanes to guide the water to uniformly penetrate the screen over its entire cross-section, which affords a uniform distribution of water instead of it falling vertically through the filtering material. One of ordinary skill in the art would be motivated to use this teaching of the Kanno reference to obtain the distribution as required in Kanno reference, column 3 line 65 – column 4 line 2.

There are two things wrong with this argument: (1) the above paragraph, as is clear from the entire paragraph, is not about the 102/103 rejection of the claims over Hankammer, but was for the rejection of the claims over Kanno in view of Hankammer. (2) the argument that somehow it contradicts itself is not correct because the office action does not say that the flow path is through the inside of the cone (9); the cited paragraph of the reference does not say that the flow path is through the inside of the cone (9); moreover, the advantage of the structure of the vanes distributing the flow around as a whirl instead of vertically impinging the filter is obtained from the vanes, which is taught by the reference. Appellant seems to be mixing up the matter from unrelated rejections to confuse the issues.

In response to the argument (page 6, 3rd paragraph of the Brief) that:

First, regardless of the Final Office Action's incorrect reasoning regarding function language, Appellants respectfully submit that a channel *in an end cap* [emphasis added] that defines a fluid flow path from an exterior of the end cap to an interior chamber of the end cap in a generally axial direction is a structural feature. A channel is a physical structure and this structure, as discussed above, renders independent claims 55, 69, 83, 97, 121 and 124 patentable over Hankammer.

The channel is not claimed as 'inside an end cap' as argued. The channel is shown as a physical structure in the rejections. Channel (11) inside the cone (9) for the device claims is a structural component of the device. A channel external to the cone (9) as defined above for claim 121 is also a structural component of the end cap. What flows in the channel and which direction it flows are functional/intended use.

In response to the argument (page 6, 4th paragraph of the Brief) that ' "a water jet arriving from above ...", is a structural limitation (quoted from Column 4, lines 23-27, of Hankammer)': a channel is identified in the rejection as accommodating this 'water jet arriving from above', which is readable on the claims. The claim language does not recite that the channel is within, or inside, the end cap.

B. The rejections of claims 55-64, 67, 69-78, 81, 83-92, 94,95, 97-105, 107, 108, 110-117, 119 and 121-126 as unpatentable over Kanno in view of Hankammer

Appellant has the following arguments against this rejection:

(1) No suggestion in Kanno that proper blood distribution would be achieved by using a structure as disclosed in Hankammer (page 9, 1st paragraph of the Brief): if Kanno taught this, the rejection would be anticipation by Kanno.

(2) Device of Kanno is not suitable for the manner in which the fluid flows in Hankammer (page 9, 1st paragraph of the Brief): this argument assumes bodily incorporation of Hankammer in Kanno by the appellant, which is not the case in a 35 USC 103(a) obviousness rejection. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

(3) improper hindsight (page 9, 2nd paragraph of the brief): It must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the Appellant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

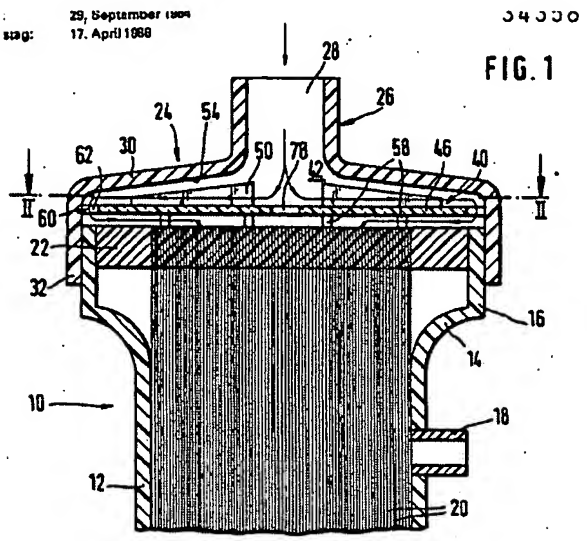
(4) Combination would render Kanno inoperable (page 10, 1st paragraph of the Brief): Appellant argues that Kanno teaches a ***dialysate*** deflection member in the vicinity of the inlet and outlet ports for dispersing dialysate, and cites figure of Kanno with column 2, lines 18-21. This is not accurate. The cited part of Kanno teaches deflector for blood and dialysate, and blood flows in the tube (or lumen) side of the hollow fibers. The spherical deflector shown in the figure provides a blind center on the

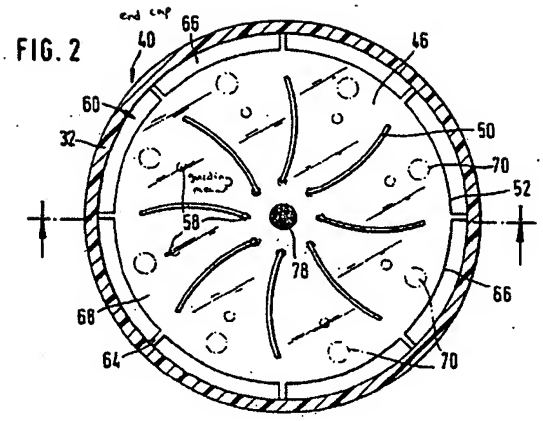
tube sheet (20) so that there are no hollow fiber lumen opening in the center portion of the tube sheet in the chamber (24) in figure 3. This construction causes deflection of the blood to the peripheral region to flow in to the lumen of the hollow fibers Flow changes from axial to radial). The deflector (27) also would provide a deflection to the dialysate, but that would not make the reference inoperable for the blood-side flow. The rejection is based on providing the vanes of Hankammer inside the end cap of Kanno. Appellant's argument that the teaching of the vanes of Hankammer inside the end caps of Kanno would make Kanno inoperable also is not convincing: how would appellant's invention work if it is inoperable?

The argument against the bodily incorporation (2nd paragraph, page 10 of the Brief): again, the rejection is not based on the specific flow direction as taught by Hankammer, but is based on the vanes taught by Hankammer.

C. Rejection of Claims 55-64, 67-78, 81-92, 94-105, 107-117, 119-127 and 131-133 are rejected under 35 U.S.C. 103(a) as being unpatentable over German Patent No. 3435883 (to Heilmann)

This reference teaches an end cap with an internal channel for axial inlet for blood, and the inside of the end cap is provided with a plurality of curved vanes on an internal surface to direct blood flow from axial to radial and tangential (vortex flow) for proper distribution of blood to the hollow fibers. Figures 1 and 2 captured below show the details. (All citations of Heilmann reference are taken from the English translation of the reference in file)





In response to the argument that the reference does not teach the feature that the members and the end cap are a single structural component and that the members extend away from an upper interior surface of the end cap in a generally axial direction (page 11, 3rd paragraph of the Brief): from figures 1 and 2, the curved vanes (50) extend from the surface of plate (46) in axial direction. Additionally, the disc (46), vanes (50) and the end cap (24) are also taught by the reference as single structural component – the disc or plate (46) is interlocked in the groove (60) of the end cap, thus making it a single component. Starting at the bottom paragraph of page 13 to the end of the third paragraph of page 14, the reference teaches that the plate can be of cone shape, and that the vanes (50) serve as spacers to the inside surface (54) of the end cap, thus prevent the plate (54) [*sic*; should be 46] from resting against the end cap (24). When vanes (50) act as a spacer, it would have physical contact with surface (54) and thus would also be extending from surface (54). All these would make the reference anticipate the claims.

In the final action, the claims were rejected as unpatentable over Heilmann because it was thought that Heilmann may not have sufficient teaching for the curved members and the end cap to be a single structural unit to fully anticipate the claims. The claims were rejected as obvious over Heilmann because making integral or separable is not patentably distinctive (MPEP 2144.04 V). Appellant's response to this rejection is the argument that ***the omission of an element and retention of its function is an indicia of unobviousness***: (page 12 of the Brief) [emphasis in the Brief]: this argument is not commensurate in scope with the claims, appellant's disclosure, the rejection and the quoted case law, as shown in the following paragraphs.

First of all, claims are open-ended and therefore, would not exclude any additional elements present in the teaching of the reference; and there is no exclusionary language in the claims to exclude the plate (46).

The contested claim of the case law *In re Edge* read:

> 1. A business bonus card comprising a layer of paper-like material having a front face and a rear face, means on said layer of paper-like material for providing a record indicative of the occurrence of a plurality of business transactions, indicia on one of said faces, *and a thin layer of metal bonded directly to said one face obscuring said indicia and capable of being erased to enable the denomination of said indicia to be ascertained.*
> [Underline added]

There is exclusionary language for the part that was eliminated (i.e., the transparent erasure-proof layer) and whose function was retained, in the recitation, "*a thin layer of metal* ***bonded directly*** *to said one face obscuring said indicia* ...". "Bonded directly" would exclude an intermediate layer. ***Neither Appellant's claims, nor the disclosure, have any exclusionary language eliminating the plate (46) of Heilmann.***

Secondly, the obviousness rejection is based on whether the reference taught single structural component, which the reference does, and therefore, the reference in fact anticipates the claims (Please note that anticipation is the ultimate or epitome of obviousness: In re Fracalossi, 681 F.2d 792, 794, 215 USPQ 569, 571 (CCPA 1982).). Even if the claims are not anticipated by reference, they are unpatentable because making the curved members integral with the end cap is not patentable over the teaching of Heilmann, unless appellant can provide secondary evidence of patentability, which appellant has failed to do.

Thirdly, the case law *In re Edge* is about eliminating a component, but retaining its function. In the present case, the eliminated part from the reference is the plate (46). However, there is no showing that the function provided by plate (46) is completely retained as argued, as is shown below:

The Heilmann reference at pages 5 and 6 describe "a circumferentially extending edge area in the shape of a ring" in the chamber formed by the end cap in the dialyzer, where blood could stagnate (page 7, 4th paragraph). Plate (46) and vanes (50) forms a flow directing system that would eliminate blood stagnation in this region by diverting the blood flow in a radial fashion (page 8, 3rd paragraph). The plate (46) is used as a flow-directing system (page 9, 2nd paragraph), and has flow distributors on the surface of the plate in the form of the vanes (50) which provide a tangential component in the flowing fluid (in other words, the vanes provide the swirling or vortex flow) (page 10, 2nd paragraph). The plate can be advantageously conical (page 11, line 1).

If one were to eliminate the plate but retain the vanes, the function of the vanes is only to provide the tangential component of the flow, or make a swirling flow (vortex). While the vortex flow has a radial component, it cannot divert the entire fluid flow from the axial direction as it enters the chamber to the radial direction like the plate does. Therefore, one cannot completely retain the function of the plate when it is eliminated, as is required by the case law, *In re Edge*.

Appellant, at page 12, 3rd paragraph of the Brief, argues that the function of the flat disc 46 – distributing fluid – has been retained by the members and end cap acting as a single unit. Appellant discloses "distribution of fluid" as (paragraph linking pages 4 and 5 of the specification):

> The guide elements may be designed as curved ribs. This makes it possible to distribute the fluid, in particular the blood, uniformly and in a defined manner. This may lead to the development of a small central vortex, but it always has radial symmetry.

The flow distribution provided by the curved member of the claim is a *small central vortex*; the Heilmann reference teaches changing the entire flow direction from axial to radial and tangential (ie., with vortex). Vanes (50) provide the vortex flow; plate (46) provides the radial flow. Thus appellant's argument that plate (46) is eliminated while its function is retained is not commensurate in scope with the claim or appellant's disclosure.

Appellant also has not provided any secondary evidence to show that the function of the plate is retained while eliminating the plate, or that the claims are patentable over Heilmann.

In response to the argument that "*the use of flow directing elements as "spacers" for a "a loosely inserted plate" is not a disclosure of members extending away from an upper interior surface of an end cap*" (page 13, 1st paragraph of the Brief): Appellant further argues that the use of the spacer elements in Heilmann is simply to prevent a loosely fitting plate from blocking passage of flow. This is not accurate. Page 9, 3rd and 4th paragraphs, of the reference teaches that the preferred embodiment has the plate fixed in the end cap. The loosely arranged plate is an alternate embodiment. In page 13, last paragraph – page 14, 3rd paragraph, Heilmann teaches the plate with respect to figures 1 and 2, which depicts the plate as "fixed" in the groove (60), and vanes (50) is described as serving the additional function of spacers. In any case, whether fixed or loose, the spacers would function as spacers. Therefore, this argument has no merit.

This argument also is not commensurate in scope with the claims because the claims require only " ... curved member and the end cap are a single structural component, ... curved member extending away from an upper interior surface of the end cap that is adjacent the channel in a direction ... the first generally axial direction...". Vanes (50) of Heilmann is extending axially away from the surface (48: figure 3) of plate (46), which is within the end cap, it is an upper interior surface of the end cap, and plate (46) with vanes (50) form a single structural unit - the plate with vanes being "fixed" to the end cap makes it a single structural component with the end cap.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

4/26/07

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